REMARKS

By this Amendment, Applicants have amended claims 1, 7, 8 and 24. Claims 1-21 and 24 are pending in the application. Claims 11-21 have been withdrawn.

The Examiner rejected claims 7, 8 and 24 under 35 U.S.C. 112, second paragraph, as being indefinite. By this Amendment, Applicants have amended claim 24 to depend from claim 3 which provides proper antecedent basis therefor. Applicants have also deleted the trademark and trade names previously set forth in claims 7 and 8 and have inserted in place thereof a generic description of the materials or products represented by these trademarks and trade names. A similar description has been added to the specification. No new matter has been introduced as the materials represented by these trademarks and trade names are known to persons of ordinary skill in the art, as evidenced by the representative web pages which are attached hereto for the Examiner's convenience.

The Examiner rejected claims 1-4 and 24 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,510,065 to McFarlane. Also under 35 U.S.C. 102(b), the Examiner rejected claims 1, 2, 6-8 and 10 as being anticipated by WO 90/00960 to Glocker et al. ("Glocker"), and rejected claims 1, 2, 7 and 8 as

being anticipated by U.S. Patent No. 5,032,343 to Jeffs or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Jeffs. Claims 5-10 were also rejected under 35 U.S.C. 103(a) as being unpatentable over any one of McFarlane, Glocker or Jeffs and further in view of U.S. Patent No. 6,630,086 to Goral et al.

As set forth in amended claim 1, the present invention is directed to a method for one-piece injection moulding of a soft needle catheter having a hub and a tube-shaped flexible part, *both of which parts are formed through the one-piece injection moulding method*. The method includes the steps of feeding a molten polymer into a mould having a core which is used to form an interior of the catheter. The mould and the core together define a hub cavity and a tube-shaped cavity having a cylindrical part for forming the hub and the tube-shaped flexible part, respectively. This step of feeding includes using a core having a cone-shaped part that extends from the hub cavity into the tube-shaped cavity *to create within the tube-shaped cavity a cone-shaped part* between the cylindrical part and the hub cavity. The cone-shaped part facilitates removal of the core when the polymer has been sufficiently cured for the core to be removed. The resulting soft needle catheter formed from the above-described one-step injection moulding method is then removed from the mould when the polymer has

been sufficiently cured to be removed. This use of a cone-shaped part in the tube-chaped cavity to ease release of the core during catheter production is not shown or suggested by the prior art.

McFarlane discloses a method of in-line injection moulding using a mould cavity portion 20 having a cylindrical cavity 24 around the core pin 22 and a widened upper area around the core pin head 23 representing the hub cavity. The cylindrical cavity 24 may be said to correspond with the tube-shaped part 4 of the present invention. However, unlike the claimed invention, this cylindrical cavity 24 has a constant inner diameter in the portion extending from the hub. There is nothing in McFarlane to suggest any motivation to modify this cylindrical part adjacent the hub to have a diameter that decreases lengthwise from the hub to a distal cylindrical part to form a cone-shaped part. Therefore, claim 1 is patentable over McFarlane.

Glocker discloses a method for one-piece injection moulding of a soft needle catheter that includes the steps of feeding a molten polymer into a mould having a core which together define a cavity composed of a hub cavity 12, 13 and a tube-shaped cavity 11 (see Figure 2 of Glocker). The hub cavity 12, 13 has a cone-shaped part as shown in Figure 2, but this cone-shaped part *does not extend into the tube-shaped cavity* 11. Therefore, Glocker

does not disclose using a core having a cone-shaped part that extends from the hub cavity *into* the tube-shaped cavity to create a cone-shaped part *within the tube-shaped cavity*, as claimed by the present invention.

Furthermore, Glocker does not suggest the claimed method because Glocker solves the mould-removal problems associated with forming thin-walled tubes by injection moulding in an entirely different way than that claimed by the present invention. Specifically, according to Glocker a problem with the production of hollow cylindrical tubes having a length of 10-150 mm by injection moulding lies in that for thin-walled parts, i.e., wall thicknesses of less than 0.3 mm, the core of the mould holding the interior of the hollow cylinder open has to be precisely centered since only slight deviations from the coaxial position lead to irregular tube wall thicknesses and irregular material flow within the mould (see the third full paragraph on page 5 of Glocker). Such irregularities can be made worse by sticking of the tube material during mould removal. This problem is solved in Glocker by using a sleeve which is movably located in the annular space between the mould and the core to achieve the centering and to assist in removal of the core after curing. Obviously, this sleeve movement must be effected with great precision.

The present invention, by contrast, provides a method for forming thin-walled tubes without the need for a centering sleeve. Instead, the claimed invention uses a core having a cone-shaped part that forms at least part of the interior of the hub and which extends into the interior of the tube-shaped part so as to form an interior of the flexible tube-shaped part that is at least partially cone-shaped. This tapered portion facilitates wrinkle-free removal of the thin-walled catheter from the mould and makes the production process cheaper and simpler (see the specification on page 3, lines 11-16). There is nothing in Glocker that would suggest that the problems encountered during mould removal in the process of forming thin-walled tubes can be solved in this way. Accordingly, claim 1 is patentable over Glocker.

Jeffs is directed to a method of producing medical micro pipette tips in which the distal portion of the tip or extension 64 is flexible so as to be able to access hard to reach places while preventing occlusion of the central passage 68 (see the abstract and column 5, lines 7-8). The cone-shaped part 24 of the pipette 20, 60 remote from the tip, however, has to be "of such a nature that it may not be materially bent, flexed or curvilinearly displaced" (see column 4, lines 18-27 and lines 55-57). The

resulting structure is not analogous to the claimed invention no matter how Jeffs is interpreted.

First, if the cone-shaped part 24 of the micro pipette 60 is to be equated with the hub 3 of the presently claimed invention, then the tube-shaped flexible part 64 of the micro pipette tip does not have a cone-shaped part, but is entirely cylindrical. In this case, claim 1 is patentable over Jeffs.

Alternatively, if only the upper part of the cone-shaped part 24 of the micro pipette 60, i.e., that part stretching from the upper end adjacent reference numeral 30 down to the shoulder 34 (see Figure 6 of Jeffs), is to be compared with the hub 3 of the presently claimed invention, then the tube-shaped part which stretches from the shoulder 34 to the end 66 cannot be described in its totality as being flexible. Rather, as defined at column 5, line 4, the material from the shoulder 34 to the site 62, namely the portion 24, is provided with substantial rigidity. In this case too, claim 1 is patentable over Jeffs in that claim 1 sets forth that the tube-shaped part is flexible.

Finally, the micro pipette product of Jeffs differs significantly in use from the soft needle catheter of the presently claimed invention. The micro pipette needs to have a dimensionally stable upper part which can be fastened to a metering device and

thereafter used to collect and dispense fluids. The soft needle catheter, on the other hand, is partly inserted intravenously or subcutaneously with an introducer needle. Therefore, it is important that the outer surface of the tube-shaped flexible part be smooth and comfortable. In addition, the fact that the tube-shaped flexible part which is positioned subcutaneously can be as short as 7 mm long makes special demands upon the production method.

For at least the foregoing reasons, claim 1 as amended is patentable over the prior art. Claims 2-10 and 24 are also in condition for allowance as claims properly dependent on an allowable base claim and for the subject matter contained therein.

With this amendment and the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance.

Should the Examiner have any questions or comments, the Examiner is cordially invited to telephone the undersigned attorney so that the present application can receive an early Notice of Allowance.

Respectfully submitted,

JACOBSON HOLMAN PLLC

By _____ Reg. No. 40,495
Harvey B. Jacobson, Jr.
Reg. No. 20,851

Attachments

400 Seventh Street, NW
Washington, D.C. 20004-2201
Telephone: (202) 638-6666
Date: November 27, 2006
HBJ:SCB/py
R:\SBAILEY\2006\11-06\P69290US0-AMD.wpd

Ecdel 9967 - Eastman Chemical Company - *Thermoplastic Elastomer*

Please login or register to view the full datasheet.

Ecdel 9967 by Eastman Chemical Company is a TPE (Thermoplastic Elastomer) plastic material.

General Information

Product Description

Ecdel elastomers are copolyester ethers (COPE). They offer the clarity, toughness, and chemical resistance needed in a variety of flexible packaging including medical applications. Ecdel elastomer 9967 may be injection molded or extruded. In addition, it may be extrusion blow molded or processed into tubing. Ecdel elastomers may be extrusion blow molded directly into bags or extruded into film for later fabrication into bags.

General

Material Status	o Commercial: Active	
Availability	o Africa o Asia o Australia o Europe o Latin America	o Middle East o North America o Pacific Rim o South America
Test Standards Available	o ASTM	
Features	o Chemical Resistance, Good o Clarity, Medium o Toughness, Good	
Uses	o Bags o Film o Medical Applications	o Packaging o Packaging, Pharmaceutical o Tubing
Forms	o Pellets	
Processing Method	o Extrusion o Extrusion Blow Molding	o Extrusion, Film o Injection Molding

Other Information for this Plastic

How to Access the Full Plastic Material Data Sheet for this Grade

The information presented on this page is just a summary for this plastic material. The full plastic data sheet containing additional general information, technical properties, and processing specifications is available from IDES. Click here to register for free access. After registering, you'll have immediate access to more than 60,000 full plastic material data sheets from 500 global resin suppliers.

Features (Alternate Representations)

Medium Clarity, Good Toughness, Tough, Good Chemical Resistance, Chemical Resistant.

Uses (Alternate Representations)

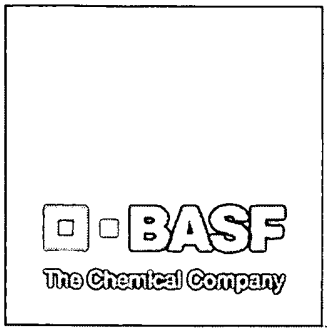
Tubing, Tube, Pharmaceutical Packaging.

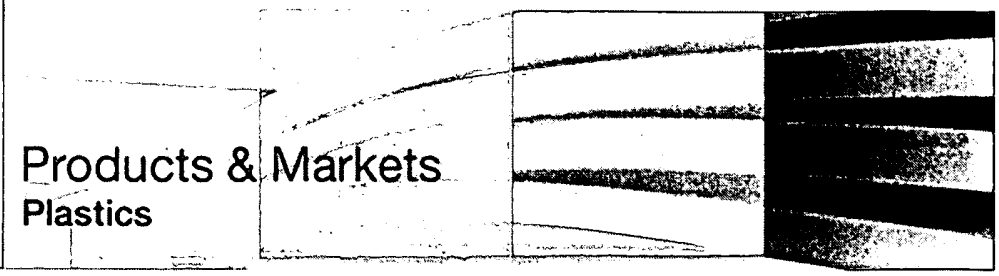
Spelling Variations

The terms listed below may be used to identify this product. They are provided to assist you in finding pertinent documentation from supplier and non-supplier sources. They are included for informational purposes only, and are typically NOT representations that have been specified by the supplier. Possible spelling variations for terms related to this product are:

Ecdel9967, Ecdel , Thermoplastic Elastomer, ThermoplasticElastomer, TPE, Eastman

and urges that upon final plastic material selection, data points are validated with the resin manufacturer.





- Home
- Products & Markets
  - Plastics
    - Styrenics
    - Engineering Plastics
    - Biodegradable Plastics
    - Foams
    - TPU
    - **Lupolen & Hostalene**
    - Automotive
    - Electrical & Electronics
    - Housing & Construction
    - Packaging
    - Toys, Leisure & Sports

Lupolen and Hostalene

Lupolen and Hostalen are the trade names of BASELL Polyolefins CO., for the range medium- and low-density polyethylenes. Lupolen and Hostalen are utilized for wide v applications, such as film, extrusion blow, steel pipe coating, extrusion pipe, injection so on.

In Japan we deal with product grades that cover many processing techniques and ap focusing on ones for blow molding (e.g. PFT (Plastics Fuel Tanks, IBC, chemical dru extrusion molding (e.g. coated steel pipes, plastics pipes). Especially for PFT applica Lupolen 4261AG to many PFT makers along with the same quality of product produc production sites: Germany, U.S.A and Korea, using the same catalyst and productior well as the same quality management system.

The following are typical Lupolen and Hostalen grades applied for PFT, IBC and Che

Lupolen: PFT Application (4261AG, 4261AQ444, 4261AQ404)

Lupolen: IBC & Chemical Drum Application (4261AGUV60005, 5261ZHI)

Hostalen: Electrostatic Grade (Fuel Tube) (GM9350C Black)

Product list (PDF)

last modified: Apr 19,

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SEARCH

Plastics Asia-Pacific

PELLETHANE Thermoplastic Polyurethane Elastomers

PELLETHANE™ thermoplastic polyurethane elastomers range from hard to soft and can be fal molding to extrusion to blow molding. These elastomers offer a combination of properties rarel Whether you need clarity and abrasion resistance, tensile strength and chemical resistance, or PELLETHANE elastomers are an excellent choice.

PELLETHANE elastomers offer several advantages over most thermoset materials. For examp achieve faster cycle times than most thermosets, and could be more cost-effective overall.

For automotive applications, PELLETHANE elastomers offer a combination of performance pro temperature impact resistance. Parts fabricated from PELLETHANE elastomers can be paintec acrylic enamels or water-based elastomeric paints.

Action Legend(Close)

T Technical Datasheet, m Material Safety Datasheet

Page 1 2 3 4 5
1 of 5

Joint Ventures

Plastics Asia-Pacific Home

Action	Product	Generic Name	Density (g/cm³)
T m	PELLETHANE™ 2101-85A	Thermoplastic Polyurethane Elastomer (Polyester)	1.13 *(ASTM I*
T m	PELLETHANE™ 2102-55D	Thermoplastic Polyurethane Elastomer (Polyester)	1.21 *(ASTM I*
T m	PELLETHANE™ 2102-65D	Thermoplastic Polyurethane Elastomer (Polyester)	1.22 *(ASTM I*
T m	PELLETHANE™ 2102-75A	Thermoplastic Polyurethane Elastomer (Polyester)	1.17 *(ASTM I*
T m	PELLETHANE™ 2102-80A	Thermoplastic Polyurethane Elastomer (Polyester)	1.18 *(ASTM I*
T m	PELLETHANE™ 2102-85A	Thermoplastic Polyurethane Elastomer (Polyester)	1.18 *(ASTM I*
T m	PELLETHANE™ 2102-85AH	Thermoplastic Polyurethane Elastomer (Polyester)	
T m	PELLETHANE™ 2102-90A	Thermoplastic Polyurethane Elastomer (Polyester)	1.20 *(ASTM I*
T m	PELLETHANE™ 2102-90AE	Thermoplastic Polyurethane Elastomer (Polyester)	1.20 *(ASTM I*
T m	PELLETHANE™ 2102-90AR	Thermoplastic Polyurethane Elastomer (Polyester)	1.20 *(ASTM I*
Action	Product	Generic Name	Density (g/cm³)

Page 1 2 3 4 5
1 of 5

Tecothane® TT-2075-B40 - Noveon, Inc. - *Thermoplastic Polyurethane Elastomer (Polyether)*

Please login or register to view the full datasheet.

Tecothane TT-2075-B40 by Noveon, Inc. is a TPU-Polyether (Thermoplastic Polyurethane Elastomer (Polyether)) plastic material with filler: Barium sulfate, 40 %.

General Information

General		
Material Status	o Commercial: Active	
Availability	o North America	
Test Standards Available	o ASTM	
Filler/Reinforcement	o Barium sulfate, 40 % Filler by Weight	
Features	o Aromatic o Processability, Good o Radiopaque	o Solvent Resistant o Sterilizable, Ethylene Oxide o Sterilizable, Radiation
Uses	o Medical Applications	
Appearance	o Colors Available	
Forms	o Pellets	
Processing Method	o Blow Molding o Extrusion o Injection Molding	

Other Information for this Plastic

How to Access the Full Plastic Material Data Sheet for this Grade

The information presented on this page is just a summary for this plastic material. The full plastic data sheet containing additional general information, technical properties, and processing specifications is available from IDES. Click here to register for free access. After registering, you'll have immediate access to more than 60,000 full plastic material data sheets from 500 global resin suppliers.

Features (Alternate Representations)

Good Processability, Easy Processing, Ethylene Oxide Sterilizable, Radiation Sterilizable.

Spelling Variations

The terms listed below may be used to identify this product. They are provided to assist you in finding pertinent documentation from supplier and non-supplier sources. They are included for informational purposes only, and are typically NOT representations that have been specified by the supplier. Possible spelling variations for terms related to this product are:

Tecothane TT2075B40, TecothaneTT2075B40, Tecothane® , Tecothane, TT2075B40, TT:2075:B40, TT/2075/B40, TT+2075+B40, TT_2075_B40, TT 2075 B40, TT-2075-B 40, TT-2075-B40, 40TT-2075-B, TT, Thermoplastic Polyurethane Elastomer (Polyether), Thermoplastic Polyurethane Elastomer Polyether, ThermoplasticPolyurethaneElastomerPolyether, Thermoplastic Polyurethane Elastomer, TPU-Polyether, TPUPolyether, TPU:Polyether, TPU/Polyether, TPU+Polyether, TPU_Polyether, TPU Polyether, Thermoplastic Polyurethane, ThermoplasticPolyurethane, TPU, Noveon

product data carboline® Carbothane®133 HB

Selection & Specification Data

Generic Type	Aliphatic Acrylic Polyester Polyurethane
Description	High build, low sheen finish that has excellent resistance to corrosion, chemicals and abrasion. Suitable for application over a number of Carboline primers and intermediates, this material provides very good weathering performance in a broad range of colors.
Features	▪ Outstanding performance properties in both mild and aggressive environments ▪ High build; suitable for many two-coat systems ▪ Suitable for application direct to inorganic zincs ▪ Application by spray, brush or roller ▪ VOC compliant to current AIM regulations
Color *	Refer to Carboline Color Guide. Certain colors may require multiple coats to hide.
Finish	Satin
Primers	Refer to *Substrates & Surface Preparation*
Topcoats	Carbothane® Clear Coat when required.
Dry Film Thickness	3.0-5.0 mils (75-125 microns) per coat. Dry film thickness in excess of 7 mils (175 microns) per coat is not recommended.
Solids Content	By Volume: 57% ± 2%
Theoretical Coverage Rate	914 mil ft^2 (22.8 m^2/l at 25 microns) 228 ft^2 at 4 mils (5.7 m^2/l at 100 microns) Allow for loss in mixing and application.
VOC Values	As supplied: 3.2 lbs./gal (383 g/l) Thinned: 11 oz/gal w/ #25: 3.5 lbs./gal (420 g/l) 18 oz/gal w/ #25: 3.7 lbs./gal (449 g/l) These are nominal values and may vary slightly with color.
Dry Temp. Resistance	Continuous: 200°F (93°C) Non-Continuous: 250°F (121°C) Discoloration and loss of gloss is observed above 200°F (93°C).

* The alignment of aluminum flakes in aluminum-filled finishes is very dependent on application conditions and techniques. Care must be taken to keep conditions as constant as possible to reduce variations in final appearance. It is also advisable to work from a single batch of material since variations can occur from batch to batch. For more information consult Carboline Technical Service Department.

Substrates & Surface Preparation

General	Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating. Refer to the specific primer's Product Data Sheet for detailed requirements of the specified primer.
Steel	SSPC-SP6 with a 1.5-2.5 mil (37.5-62.5 micron) surface profile for maximum protection. SSPC-SP2 or SP3 as minimum requirement. Prime with specific Carboline primers as recommended by your Carboline sales representative.
Galvanized Steel	Prime with specific Carboline primers as recommended by your Carboline Sales Representative. Refer to the specific primer's Product Data Sheet for substrate preparation requirements.
Aluminum	SSPC-SP1 and prime with appropriate Carboline primer as recommended by your Carboline sales representative.
Previously Painted Surfaces	Lightly sand or abrade to roughen and degloss the surface. Existing paint must attain a minimum 3B rating in accordance with ASTM D3359 "X-Scribe" adhesion test. Prime with specific Carboline primers as recommended by your Carboline sales representative.

Performance Data

Test Method	System	Results	Report #
ASTM D4213 Scrub Resistance	1 ct. 133 HB	.0027 microliters erosion rate after 100 cycles with abrasive scrub medium.	03403
ASTM G26 Weatherometer	Blasted Steel 1 ct. IOZ 1 ct. 133 HB	No blistering, rusting or cracking after 3500 hours.	01982
ASTM G53 QUV (2500 hours w/ UVA 340 bulb)	Blasted Steel 1 ct. Epoxy 1 ct. 133 HB	Color change less than 2 McAdam units; no blistering, rusting, cracking or chalking.	03394
ASTM B117 Salt Fog	Blasted Steel 1 ct. OZ 1 ct. 133 HB	No rusting, or blistering on plane or scribe 4,000 hours	02585
ASTM B117 Salt Fog	Blasted Steel 1 ct. IOZ 1 ct. 133 HB	No rusting, or blistering on plane or scribe 2,000 hours	02585
ASTM D5894 QUV A Prohesion	1 ct. 133 HB	No effect on plane area and 78% gloss retention after 1008 hours of wet/dry salt fog cycle	03274
ASTM D4585 Humidity	Blasted Steel 1 ct. IOZ 1 ct. 133 HB	No rusting or blistering after 3000 hours.	02585
Graffiti Resistance	Blasted Steel 1 ct. Epoxy 1 ct. 133 HB	All markings and stains removed by solvent after exposure to: shoe polish, Sharpie marker, crayon, lipstick, spray cans of acrylic, alkyd and epoxy.	03395
ASTM D1735 Water Fog	Blasted Steel 1 ct. Epoxy 1 ct. 133 HB	No rusting or blistering after 8600 hours.	02061

Test reports and additional data available upon written request.

April 2003 replaces December 2002

0840

Carbothane®133 HB

Application Equipment

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.
General Guidelines:

Spray Application (General) This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

Conventional Spray Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.

Airless Spray

Pump Ratio:	30:1 (min.)*
GPM Output:	3.0 (min.)
Material Hose:	3/8" I.D. (min.)
Tip Size:	.013-.015"
Output PSI:	2100-2300
Filter Size:	60 mesh

*Teflon packings are recommended and available from the pump manufacturer.

Brush & Roller (General) Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F (24°C).

Brush Recommended for touch-up only. Use a medium, natural bristle brush.

Roller Use a medium-nap synthetic roller cover with phenolic core.

Mixing & Thinning

Mixing Power mix Part A separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

Ratio 6:1 Ratio (A to B)

	.88 Gal. Kit	5.0 Gal. Kit
Part A:	1 gal. can (partial filled)	5 gal. can (partial filled)
UC 133:	1 pint	1 gallon can (partial filled)

Thinning
Spray: Up to 11 oz/gal (9%) w/ #25.
Roller: Up to 18 oz/gal (14%) w/ #25.
Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Pot Life 4 Hours at 75°F (24°C) and less at higher temperatures. Pot life ends when coating becomes too viscous to use. MOISTURE CONTAMINATION WILL SHORTEN POT LIFE AND CAUSE GELLATION.

Cleanup & Safety

Cleanup Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Safety Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.

Ventilation When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.

Cleanup & Safety Cont.

Caution This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	65°-85°F (18°-29°C)	65°-85°F (18°-29°C)	65°-85°F (18°-29°C)	35-60%
Minimum	40°F (4°C)	40°F (4°C)	40°F (4°C)	0%
Maximum	100°F (38°C)	110°F (43°C)	110°F (43°C)	90%

Industry standards are for substrate temperatures to be 5°F (3°C) above the dew point. This product simply requires the substrate temperature to be above the dew point.
Caution: This Product is moisture sensitive in the liquid stage and until cured. Protect from high humidity, dew and direct moisture contact until cured. Application and/or curing in humidities above maximum, or exposure to moisture from rain or dew may result in a loss of gloss and/or microbubbling of the product.

Curing Schedule

Surface Temp. & 50% Relative Humidity	Dry to Handle	Dry to Recoat	Final Cure
40°F (4°C)	20 Hours	20 Hours	28 Days
50°F (10°C)	12 Hours	12 Hours	14 Days
75°F (24°C)	5 Hours	5 Hours	7 Days
90°F (32°C)	1 Hour	1 Hour	4 Days

These times are based on a 3.0-5.0 mil (75-125 micron) dry film thickness. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure.

Packaging, Handling & Storage

Shipping Weight (Approximate)	.88 Gallon Kit 11 lbs (5 kg)	5 Gallon Kit 64 lbs (29 kg)
Flash Point (Setaflash)	Part A: 95°F (35°C) Part B: 91°F (33°C)	
Storage (General)	Store Indoors.	
Storage Temperature & Humidity	40° -110°F (4°-43°C) 0-90% Relative Humidity	
Shelf Life	Part A: Min. 36 months at 75°F (24°C) Part B: Min. 24 months at 75°F (24°C)	

***Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.**

carboline
350 Hanley Industrial Court, St. Louis, MO 63144-1599
314/644-1000 314/644-4617 (fax) www.carboline.com
An RPM Company

April 2003 replaces December 2002

Home

Technical Info

Examples

About CPT

Processing Conditions

Contact Us

PDF Files

Injection Molders

FREE Seminar

4451 110th Ave. N.
Clearwater, Fl 33762
1-800-541-6880
E-mail

C-FLEX® ***...easily processed by most conventional screws.***

Technical Info

C-Flex is a family of patented thermoplastic elastomers (TPE's) which range in hardness from 5 shore A durometer to 95 shore A durometer. C-Flex TPE's are biocompatible polymer blends which meet or exceed the current United States Pharmocopoeia Class VI test requirements. Consolidated Polymer Technologies, Inc. (CPT) the C-Flex patent holder, maintains two Material Master Files with the FDA on C-Flex opaque and clear materials. These master files summarize all the biocompatibility testing completed on C-Flex materials.

C-Flex does not contain latex rubber, polyvinyl chloride, silicone rubber or polyurethane. C-Flex can be processed with most conventional screws. Reciprocating screw injection machines are preferred and can provide lower operating temperatures and more uniform melt characteristics. Cylinder temperatures of 300 – 425F would be typical, injection pressures vary from 300 to 10,000 psi.

(Click Here) to connect to CPT Technical Support Department for additional details on C-Flex for your next project.

Thermoplastic elastomers (TPE's) combine the processing advantages of thermoplastic with the properties of vulcanized rubber. When heated, TPE's melt and can be formed into complex shapes using standard thermoplastic melt processing equipment. As solids, they are soft, flexible and resilient like rubber and can be decorated, reground, and reprocessed without significant property loss.

C-Flex Property Documentation:

- Technical Information Sheet, Opaque Formulations (PDF File)
- Technical Information Sheet, Clear Formulations (PDF File)

To learn more about C-Flex (click here). We welcome the opportunity to learn more about your application - and to help you understand how C-Flex might be the right solution.